

Southern California Edison
Circle City and Mira Loma-Jefferson PTC A.15-12-007

DATA REQUEST SET A1512007 ED-SCE-12

To: ENERGY DIVISION

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Question 12.3:

Please evaluate the potential for using only two battery storage sites for the TCC Option as well as the Existing Mira Loma Infrastructure with Proposed Circle City Configuration and Distributed Energy Resources Option (FCC Option) to defer the project through 2027.

Response to Question 12.3:

Please find below SCE's observations from evaluating the power flow scenarios requested.

TCC Option

The TCC Option with battery storage at only two sites proposes that the Mira Loma-Jefferson 66 kV Line ("MLJ Line") would not be constructed and a partial Circle City Substation would be constructed (with two source lines rather than four). Battery storage would be installed and connected to Chase and Jefferson Substations, but not at Corona Substation.

SCE's assessment of the TCC Option described above produces the following observations. Through 2027, under peak load conditions and all facilities in-service, there were no observed overload conditions; however, the Cust Sub1-Jefferson 66 kV Line was at 99% of its operating limit with both generators producing at Cust Sub1 and Cust Sub3. Through 2027, under peak load conditions and during N-1 conditions, there were no observed overload conditions and the Mira Loma-Corona 66 kV Line was at 86% of its emergency operating limit.

Under the above scenario, but with the MLJ Line in-service, during normal conditions with all facilities in-service, the 99% loading identified is lowered to 83%. The observation here is that without the MLJ Line, it is reasonable to expect that within a year or two beyond 2027, there would be the potential for generation curtailment from either or both of the generation sources on that line. This same exposure is not present with the MLJ Line in-service. Additionally, with the MLJ Line in-service, during N-1 conditions the loading of the Mira Loma-Corona 66 kV Line was reduced to 64% of its emergency operating limit.

SCE also notes that during an N-1 of the Mira Loma-Cust Sub3-Cust Sub1 66 kV Line, if both battery storage installations are not fully functional, available, and on-line¹, there may be low-voltage violations at Circle City, Chase, Cust Sub1, and Cust Sub2 Substations. This same concern is not present with the MLJ Line in-service.

Because it is observed that an additional project would be needed soon after the end of the studied horizon (and likely only 6-7 years after the proposed in-service date of the TCC option) if the MLJ line were not constructed, SCE does not consider the proposed solution identified above as being preferred to constructing the MLJ Line and addressing the needs in the area for the long term versus that of the short term which the proposed solution entails.

FCC Option

The FCC Option with battery storage at only two sites proposes that the MLJ Line would not be constructed and the full scope of Circle City Substation would be constructed (all four source lines). Battery storage would be installed and connected to Chase and Jefferson Substations, but not at Corona Substation.

SCE's assessment of the FCC Option described above produces the following observations. Through 2027, under peak load conditions and all facilities in-service, there were no observed overload conditions; however, the Cust Sub1-Jefferson 66 kV Line was at 98% of its operating limit with both generators producing at Cust Sub1 and Cust Sub3. Through 2027, under peak load conditions and during N-1 conditions, there were no observed overload conditions and the Mira Loma-Corona 66 kV Line was at 86% of its emergency operating limit.

Under the above scenario, but with the MLJ Line in-service, during normal conditions with all facilities in-service the 98% loading identified is lowered to 80%. The observation here is that without the MLJ Line, it is reasonable to expect that within a year or two beyond 2027, there would be the potential for generation curtailment from either or both of the generation sources on that line. This same exposure is not present with the MLJ Line in-service. Additionally, with the MLJ Line in-service, during N-1 conditions the loading of the Mira Loma-Corona 66 kV Line was reduced to 67% of its emergency operating limit.

SCE also notes that during an N-1 of the Mira Loma-Cust Sub3-Cust Sub1 66 kV Line, even if both battery storage installations are not functional and on-line, there are no low-voltage violations observed.

Because it is observed that an additional project would be needed soon after the end of the studied horizon (and likely only 6-7 years after the proposed in-service date of the FCC option) if the MLJ line were not constructed, SCE does not consider the proposed solution identified above as being preferred to constructing the MLJ Line and addressing the needs in the area for the long term versus that of the short term which the proposed solution entails.

Lastly and in summary to the above options, SCE has thus far only evaluated the battery storage facilities at any of the locations with respect to MW values and not MWh values.

¹ The use of large-scale utility-owned battery storage to satisfy a myriad of various system related issues and contingencies is relatively new. The sole reliance on this technology as a means to solve all potential issues with varying durations may not be considered prudent at this time. The role that these potential battery storage facilities would have is just beginning to be

experienced and learned from. It would be prudent planning to take into consideration the potential for unforeseen events, impacts, or outcomes of relying on battery storage and therefore plan around the contingencies in the event the batteries do not solve a system problem that they were expected to. This is another consideration for retaining the Mira Loma-Jefferson 66 kV Line portion of the project.